Study of a Zr modified 2014 aluminium alloy: analisys of the best warm forming conditions.

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Abstract

The warm forming plasticity conditions of a Zr modified 2014 aluminium alloy has been widely studied in the present work. The microstructure of the material was analyzed by TEM in the as-received and as-deformed conditions. Torsion tests were performed in the temperature and strain rate ranges of 250-300 °C and 10^{-3}-1 s^{-1} respectively. The ductility of the material subsequently to Zr addition was analyzed in terms of strain to fracture in torsion, the constitutive equations and the activation energy in warm forming conditions were calculated.

Keywords: Zr-modified Al-Alloy, Torsion tests, TEM.

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